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The Advisory Council of the College Section A.S.A.E., met in Washington May 3-5. The research work of the various divisions of the Bureau was presented briefly. Representatives of the Rural Electrification Administration, Resettlement Administration and the Soil Conservation Service also addressed the Council on work of those organizations. Members of the Council are: Hobart Beresford, Idaho; E. G. McKibben, Iowa; C. O. Reed, Ohio; R. B. Robb, New York and F. R. Jones, Texas.

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S. W. McBirney reports that germination stand counts have been completed on the sugar beet plots put in with the hill planter that is being developed to get more uniform seed distribution. The counts show that at the same seeding rate the new planter gives a significantly higher percent germination stand than a commercial planter used for comparison. There is also an accompanying increase of one-third to one-half in the number of single seedlings thereby permitting more rapid thinning.

Mechanical thinning of sugar beets is, apparently feasible, according to Mr. McBirney. He notes encouraging progress toward this end with the experimental planters he and E. M. Mervine have built. Regular spacing of beet seed is accomplished by having the seed cells of the planter discharge individual seeds close to the soil. Unusually satisfactory rains this spring have permitted extensive experimental plantings.

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The pecan spraying investigations of the Bureau at Albany, Ga., have been concluded, and E. M. Dieffenbach will be transferred about June 1 to Toledo to help centralize the Bureau's investigational work on mechanical methods of insect and plant disease control.

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J. W. Randolph reports that the large acreages of cotton planted by farmers in the Montgomery-Prattville, Ala., area with the variable depth planter have withstood the extremely adverse soil, disease and weather conditions and have made stands, whereas with the customary planting methods there has been some replanting on 50 percent of the farms. This



makes the sixth season at the Prattville field that the variable depth planting method has proved successful on the 35 different types of seed beds.

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The work on disk testing E.D. Gordon reports, is now under way. It has already been brought out that the quality of the disk bearing has a marked effect on the draft requirements of the disk.

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I. F. Reed reports that the utility car recently purchased has been equipped with an effective sprinkler unit which permits close control over the amount of water applied to the soil in the 250 feet by 20 feet bins. The power driven hose reel pays out and takes up the  $1\frac{1}{2}$  inch hose very satisfactorily.

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R. M. Merrill spent May 13 and 14 at Moorestown, N.J., making arrangements with Frank Irons to transfer the latter's activities to Toledo.

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Several applications of material to apple trees and raspberries by means of vapor spraying equipment have been made near Wooster, Ohio by O. K. Hedden of the Toledo office.

During the past month borders of a vinyard near Sandusky, Ohio, have been burned with field burners for the control of grape leaf hopper.

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W. M. Hurst reports two experimental pyrethrum strippers ready for the coming harvest season. This work is carried on with the Bureau of Plant Industry and tests will be made with the machines in Maryland, Pennsylvania, and West Virginia during June.

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Count von Bismarck, grandson of the famous German statesman Prince Otto von Bismarck recently visited the Division of Mechanical Equipment. He operates a large farm in northern Germany and is interested in mechanical equipment developments in the United States suitable for that region.

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On May 18, R. B. Gray discussed the work of the Division of Mechanical Equipment with representatives of Secretary Wallace's office. Display boards showing photographs of equipment and operations were set up and movies were used to show field operations.

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L. G. Schoenleber completed the fertilizer placement experiments with cotton in North Carolina and South Carolina and left Washington on May 12 to supervise similar work with other crops in Ohio and Michigan. A fertilizer placement experiment with corn was also started in North Carolina.

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W. H. Redit attended the meeting of the Georgia Section of the A.S.A.E. on April 17 at Athens. He returned to Washington May 14 after completing several fertilizer placement experiments in South Carolina, Georgia and Mississippi. The Bureau engineers have assisted several of the southern experiment stations this season, largely in an advisory capacity, in making studies of the operation of fertilizer placement machinery recently developed.

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G.A. Cumings and D. B. Eldredge have completed the construction of special equipment used in fertilizer placement experiments on pasture and alfalfa in Indiana, Ohio, and Michigan. Furrows were opened 4 inches and 8 inches apart and considerable weight on the machine as well as a relatively large amount of power was required on blue grass sod. In most cases suf-



ficient phosphorus was applied to be effective for 4 or 5 years. An application of nitrogen and potash, which are soluble, can be made on the surface of the ground each year if desired.

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:                   Smithsonian Gets Old Drain Tile  
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:                   During their Washington meeting early in May the  
:   Advisory Council of the College Section, A.S.A.E., and several  
:   members of the Bureau went to the Smithsonian Institution,  
:   where Prof. Robb of Cornell University presented Dr. C. G. Abbott,  
:   Director of the Smithsonian with two specimens of the first  
:   drain tile made in America. Prof. Robb dug up the sections on  
:   the John Johnston farm on the shore of Seneca Lake, New York.  
:   Johnston, a native of Scotland, made and laid the tile 100  
:   years ago and the drains are still in good condition. In accept-  
:   ing the specimens Dr. Abbott gave some reminiscences of his  
:   youth on a New Hampshire farm in which he told of having laid  
:   many rods of stone drains.  
:                   Mr. Robb made the presentation on behalf of Cornell  
:   University, the bureau, and the American Society of Agricultural  
:   Engineers.  
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The Central District Drainage Camps report the following work accomplishments for April: 5,322,591 square yards of clearing, 1,396,017 cubic yards of excavation and embankment, 34,215 lineal feet of tile reconditioning, and other miscellaneous work covering surveys and structures, requiring a total of 71,456 man-days.

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A drainage conference of representatives of the Illinois camps was conducted at the University of Illinois, Urbana, from April 29-May 1. The meeting, arranged by the Agricultural Engineering Department of the University and the Bureau, was attended by many district commissioners, drainage engineers and attorneys, as well as by students of the University and superintendents and engineers of the drainage camps.

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Within the last month, five of the Central Districts Missouri camps have been called upon for emergency work. Camp D-6, Rockport, aided the town of Rockport on April 20, in the opening of drains and clearing debris following a cloudburst. Camp D-2, Carrollton, aided in clearing debris from highways, ditches, and adjacent farm land after a tornado which passed over that area April 29. The camps at Delta, New Madrid, and Hayti, along with other camps and government agencies assisted U. S. Engineers in emergency construction of a temporary levee to protect lands in the Bird's Point-New Madrid Floodway from new flood waters of the Ohio River.

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John G. Sutton spent May 20 and 21 at the Washington Office in conference relative to the program of the Drainage CCC camps for the fiscal year 1938.

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Reports giving results of snow surveys as of April 1 and forecasts of water supply for the coming irrigation season, covering the main drainage



basins of the Western States, were distributed to all cooperating agencies. In Oregon, in cooperation with the Oregon State Engineer, four district water forecast meetings were held (at Medford, Bend, Baker, and Pendleton) at which representatives of power and light companies, irrigation districts, district watermasters, U. S. Bureau of Reclamation, U. S. Forest Service, Oregon Extension Service, and others were present. Irrigation water supply forecasts were developed for the important streams in each major basin. These were combined into a State forecast and presented over radio station KOAC on April 12. A conference of representatives of the U.S. Weather Bureau, the Hydrology Section of the U. S. Army Engineer Corps, and Messrs. Marr, Jessup, and Work, of the Division of Irrigation was held at Pendleton April 11 to discuss snow problems in relation to stream flow forecasting.

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Concerning his assignment to supplementary irrigation studies in the Dakotas, M. R. Lewis reports that the State Water Conservation Commission of North Dakota has completed its organization and has worked out a program for the present season. In line with the policy of the commission to aid individual farmers and small groups in establishing irrigation systems, to date some 83 applications for preliminary surveys have been received. Twenty or more of these have been reported favorably and detailed surveys are under way. To other phase of the program is a cooperative effort, with the North Dakota Rural Rehabilitation Corp., in developing small projects designed to furnish a small area of irrigated forage-producing land for stockmen operating within a reasonable distance of the projects. The Commission will be responsible for the engineering work on these projects. In South Dakota, programs for two preliminary surveys, one on supplementary irrigation and the other on stock water facilities especially dams, have been worked out. An allotment of \$25,000 has been made by the Resettlement Administration for loans to individual farmers for irrigation plants. Mr. Lewis, assisted by Carl Rohwer and Dean C. Muckel will supervise these installations.

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In connection with the study of Irrigation of Subtropical Fruit in southern California, Colin A. Taylor reports that the wilting range determinations were completed and data are being plotted. A definite relation is shown between the proportion of root zone moistened and the minimum moisture content reached by the remaining unirrigated part of the root zone. These tests will show the degrees of water deficit developed by the plants without visible signs of wilting. Three mature orchards - a lemon orchard in San Bernardino Co. near Pomona, a navel orange orchard at San Dimas, and a Valencia orange orchard against the hills north of San Dimas, were selected for observation preliminary to a more detailed study of water deficit as it relates to growth rate of fruit and total yield. The plan of the experiment calls for two years of observation before any change is made in the irrigation, which will permit time to determine the varying needs of the trees and any difficulties in the way of nonuniform water penetration on each plot. The reaction of the trees over a period of years will be observed to determine what degree of water deficit is permissible without injury to the trees.

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Preliminary text of the report of the Rio Grande investigation for the National Resources Committee was completed, and copies were submitted to the Rio Grande Compact Commissioners of Colorado, New Mexico and Texas for comment and suggestions to be taken into consideration in a final revision. Harry F. Blaney returned to Los Angeles headquarters but Fred C. Scobey is still at Santa Fe, completing preparation of the maps.



R. L. Parshall has reported a formula for preventing snow cores from sticking in the sampling tubes used in the snow cover measurements. The formula was gotten up by Ranger Fortenberry of the Rio Grande National Forest, and has been used satisfactorily by him and other rangers. The directions follow: Prepare a mixture of 75 percent cocoa butter; 20 percent beeswax (or paraffine); and 5 percent gasoline. Melt the cocoa butter and beeswax (or paraffine), remove from heat and allow to cool partially. Then add gasoline (being careful that there is no flame near the gasoline fumes) and mix well. Swab the sampling tube with this mixture, both inside and out, and allow it to stand for at least an hour before using. When ready to use the tube, swab it both inside and outside with a light lubricating oil. An occasional swabbing with the oil may be necessary during the sampling operation. Best samples are obtained by plunging the tube quickly.

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Homer L. Witzel, whose leg was broken in a motorcycle accident in November, has returned to duty with L. J. LaRock on the farmhouse investigations at Madison, Wisc.

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Willis Roy Swanson reported on May 1 for duty with the Division of Structures. He is a graduate of the University of Minnesota and at the time of his appointment was an instructor in Agricultural Engineering at that institution. After spending two weeks at the Washington office, he left with C. F. Kelly, for Hays, Kansas, where he will represent the Bureau on the wheat storage project. Mr. Kelly will spend a few weeks at Hays to help in getting the project started and will then go to Fargo, North Dakota, to carry on wheat storage investigations.

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The annual exhibition of the Association of Federal Architects will be on view until the end of May in the foyer of the National Museum. The Bureau of Agricultural Engineering exhibit includes water color renderings of farmhouses chosen from Farmers' Bulletin 1738. The exhibit includes also work of the Forest Service, Bureau of Biological Survey and the Resettlement Administration.

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T.A.H. Miller visited M. J. LaRock at Madison, Wisc. during the week of April 26, and examined in detail the houses in which studies are being made of remodeling to improve living conditions. He also visited the Forest Products plywood house. Enroute to Madison Mr. Miller visited the new fence and wire plant of the Republic Steel Corporation at Chicago. This plant uses a new method of electrolytic deposit of zinc on wire.

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Publications issued:

Protection of Apples and Pears in Transit from the  
Pacific Northwest during the Winter Months. Tech. Bul. 550.  
By E. D. Mallison, E. A. Gorman, Jr. and W. V. Hukill.

Ditch Maintenance Experiments in Ohio and Delaware. (Mimeo)  
By W. D. Ellison.

